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REMARKS/ARGUMENTS

Claims 1-42 stand rejected in the outstanding Official Action. Claims 5, 18, 30 and 38 have been cancelled without prejudice and the subject matter incorporated into their respective independent claims. Accordingly, claims 1-4, 6-17, 19-29, 31-37 and 39-42 are the only claims remaining in this application.

The outstanding Final Rejection contains only a statement that claims 1-42 are rejected under 35 USC §102 as being anticipated by Cmelik. Accordingly, Applicants' previous arguments over the Cmelik are duplicated below.

The Examiner's new points of arguments on pages 2-4 of the Final Rejection

The Examiner's statement "in response to applicant's arguments" is very difficult to understand. The lack of quotations when quoting Applicants claims render it unclear whether the Examiner is arguing that the Cmelik reference at column 28, lines 9-34 teaches the claim requirement of "a predetermined generated instruction having a corresponding condition code." The Examiner seems to quote the Cmelik reference at column 28, lines 9-34, but there is no indication of how the cited portion of column 28 has anything to do with the feature of Applicants' claim, i.e., the corresponding generated instruction "being a predetermined generated instruction having a corresponding condition code."

The portion presumed to be from Cmelik column 28 only describes "reordering and other optimization" for instructions that are to be run multiple times. It describes various methods of selecting instructions for optimization that are likely to be executed repeatedly. The Examiner has provided no indication of how he believes this has any relevance to "a predetermined

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generated instruction having a corresponding condition code" as recited in Applicants' independent claims.

The Examiner goes on to reference column 19, lines 42-56 and there is a portion that appears to be taken as a quote from the Cmelik reference. While the Examiner does not provide any indication as to the relevance of the second cited portion with respect to the first section (I) of the Response to Arguments, even if there were some relevance, it would be moot in view of the amendment to Applicants' independent claims specifying that the "predetermined generated instruction is an instruction which is not recognized by said target processor" (previously the subject matter of dependent claims 5, 18, 30 and 38, but now incorporated into their respective independent claims).

Accordingly, the Examiner, upon being challenged in the previous Request for Reconsideration as to where the claimed structures and structural interrelationships were disclosed in the Cmelik reference, fails to meet his burden of showing where the claim limitations are present in the cited prior art reference.

With respect to section (II), presumably directed to where the Cmelik reference contains a suggestion of the claimed step of "replacing said predetermined generated instruction with said corresponding instruction from said sequence of instructions so as to cause said corresponding instruction to be executed," the Examiner again seems to quote another portion of the Cmelik reference at column 32, lines 24-42 (it is believed that the correct citation of the unquoted but copied language from the Cmelik reference is column 32, lines 28-43).

It is noted that this portion of Cmelik discusses a further optimization of the Cmelik technique identifying that the translation "may be accomplished without generating an

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exception.” Again, this quoted portion of Cmelik does not seem to be of any particular relevance to the present invention and certainly does not disclose the claimed feature of “replacing said predetermined generated instruction with said corresponding instruction from said sequence of instructions so as to cause said corresponding instruction to be executed.”

Thus, the Examiner’s response to the Request for Reconsideration in citing large blocks of text from the Cmelik reference does not address the underlying issues, i.e., where does Cmelik teach each of Applicants’ claimed method steps or apparatus elements?

For completeness sake, Applicants will now include the Request for Reconsideration’s rebuttal to the general rejection of claims 1-42 under 35 USC §102.

Claims 1-42 stand rejected under 35 USC §102 as being anticipated by Cmelik (U.S. Patent 6,031,992). The Court of Appeals for the Federal Circuit has noted in the case of *Lindemann Maschinenfabrik GMBH v. American Hoist & Derrick*, 221 USPQ 481, 485 (Fed. Cir. 1984) that “[a]nticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim.”

Independent claim 1 requires in subsection “a)” that “the corresponding generated instruction being a predetermined generated instruction having a corresponding condition code” (emphasis added). This same limitation is also present in independent apparatus claim 14 and in independent computer program product claim 35. Independent claim 1 also specifies that during step b), if a condition is satisfied, the step of “replacing said predetermined generated instruction with said corresponding instruction from said sequence of instructions so as to cause said corresponding instruction to be executed.” This limitation is also present in independent apparatus claim 14 and in independent computer program product claim 35.

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Accordingly, to satisfy the Patent Office burden of proving anticipation of claims 1-42, the Examiner must show that the above limitations are clearly evident in the Cmelik patent. The Examiner has failed to meet this burden of establishing that Cmelik teaches the claimed subject matter and therefore the rejection of claims 1-42 under 35 USC §102 is respectfully traversed.

Specifically, the Examiner cites on page 3 of the Office Action that the Cmelik reference, at column 4, lines 57-67, allegedly teaches Applicants' claimed "generating" step (set out in claims 1, 14 and 27). However, the Examiner appears to misapprehend that which is taught by the Cmelik reference. The cited portion of Cmelik merely discloses that an emulation program is used to change instructions of a target application program to instructions of a primitive host system ("consequently, the emulation program, which changes the instructions of the target application program to primitive host instructions which the host operating system is capable of utilizing," (Cmelik, column 4, lines 65-67).

The portion of Cmelik cited by the Examiner has nothing to do with target program instructions having a condition code result in production of predetermined primitive host instructions having corresponding condition codes. Again, the language of Applicants' independent claim 1 specifies "generating . . . a corresponding sequence of generated instructions, . . . the corresponding generated instruction being a predetermined generated instruction having a corresponding condition code;" There is simply no disclosure in Cmelik of any "generating" step which generates a corresponding sequence of generated instructions where the corresponding generated instruction is a "predetermined generated instruction having a corresponding condition code." Cmelik merely "changes the instructions of

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the target application program to primitive host instructions which the host operating system is capable of utilizing" (Cmelik, column 4, lines 65-67).

In the text of the Official Action which allegedly supports the Examiner's conclusion of disclosure in Cmelik, even the Examiner's comments evidence the speculation required to conclude that the disclosure actually exists in Cmelik. The Examiner speculates "consequently, the emulation program . . . must somehow link the operations designed to operate hardware devices in the target computer to operations which hardware devices of the host system are capable of implementing" (emphasis added). The Examiner does not indicate that Cmelik teaches any linking, but just that Cmelik purportedly teaches that this must "somehow" occur.

Additionally, the Examiner states "often this requires the emulator software to create virtual devices . . ." (emphasis added). There is no allegation that this is done or disclosed in the Cmelik reference, nor is there any indication that this is what is required by Applicants' claims.

Finally, the Examiner states "sometimes the emulator is required to create links . . ." (emphasis added) but again fails to even allege that there is any teaching of this feature in the Cmelik reference.

Apart from the Examiner's speculation, there is simply no disclosure in the Cmelik reference of the features set out in claims 1, 14 or 27. Accordingly, claims 1, 14 and 27 cannot be anticipated by the Cmelik reference.

The Examiner also fails to indicate how or where the Cmelik reference teaches the subject matter of Applicants' claim 1, c), i.e., if a condition code is satisfied, the step of "replacing said predetermined generated instruction with said corresponding instruction from said sequence of instructions so as to cause said corresponding instruction to be executed." This

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limitation is also present in independent apparatus claim 14 and in computer program product claim 35, b). As will be seen, because this feature is missing from the Cmelik reference, these claims cannot be anticipated by Cmelik.

Specifically, the Examiner generally cites column 11, line 54 to column 12, line 30 of Cmelik as being somehow relevant. The Examiner's reference to the steps of claim 1 step c) of "determining" and "replacing" is in the paragraph beginning towards the bottom of page 4 and continuing to page 5 of the Official Action. The Examiner references Cmelik at column 11, lines 54 to 67, but it is noted that the Examiner has erroneously placed quotation marks before the phrase "the code morphing software" at line 2 on page 5, because that quoted language does not in fact exist in the Cmelik patent.

The Examiner's interpretation of what is disclosed in the Cmelik reference is similarly lacking in any disclosure of the claimed step of "determining" and, if so, "replacing." The Examiner fails to identify any portion of Cmelik which he interprets to teach the claimed subject matter.

Rather than meet his burden of establishing how or where Cmelik teaches the claimed subject matter, the Examiner provides a paragraph which appears to be the Examiner's understanding of how translation buffers operate. In fact, the Examiner is believed to misunderstand the Cmelik reference, which merely discloses that an enhanced hardware processing portion (Cmelik identifies this as a "morph host") is used together with emulating software (or "code morphing software") to test target application software. The code morphing software is combined with the morph host so that instructions of the target system are translated into instructions of the host system and stored in a translation buffer.

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As stated in Cmelik, column 12, lines 18-27, the use of the translation buffer “allows instructions to be recalled without re-running the lengthy process or determining which primitive instructions are required to implement each target instruction” Clearly, this discussion in Cmelik discloses storing in a translation buffer instructions that have **already been translated** (from the target system instructions) to host system instructions. This has nothing to do with, and certainly does not suggest, the subject matter of claim 1, step c), or the similar language in claims 14 and 35.

There is no disclosure in Cmelik of using a “predetermined generated instruction” to determine with reference to status information “whether the condition code of said predetermined generated instruction is satisfied” (as required by claim 1, c)) and “if so, replacing said predetermined generated instruction with said corresponding instruction from said sequence of instructions”

In point of fact, Cmelik actually teaches away from Applicants’ claimed method steps and apparatus by teaching that target instructions are replaced with instructions from some other instruction set (in Cmelik’s case, the “host instructions”) and this results in a sequence of instructions that can reproduce the intended behavior of a program. Thus, Cmelik actually would lead one of ordinary skill in the art away from Applicants’ claimed combination of elements and method steps. Clearly, Cmelik contains no disclosure which would anticipate the subject matter of independent claims 1, 14 and 35 and thus any further rejection of these independent claims is respectfully traversed.

In summary, it has clearly been pointed out above that the Cmelik reference fails to teach or suggest two method steps set out in Applicants’ independent claims 1 and 14 and structural

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interrelationships set out in those claims. These two missing limitations have been split into two independent computer program product claims 27 with respect to the "generating" step of claim 1, and computer program product claim 35 with respect to the "determining" and "replacing" step of claim 1, c). Because all claims depend from one of claims 1, 14, 27 and 35, there is simply no basis for allegation that claims 1-42 are anticipated by the Cmelik reference and any further rejection thereunder is respectfully traversed.

Even beyond the Examiner's failure to identify how or where Cmelik teaches the specifically recited steps and structures of Applicant's claimed invention, Cmelik is not directed to solve the problems of Applicants' claimed invention. The present invention is directed to the problem of more efficiently performing software testing to obtain code-coverage or code-profiling information. It seeks to ameliorate the problem of inefficiencies associated with the requirement to use a handler-routine to refer back to an original instruction in order to determine whether a condition code associated with the program instruction is satisfied.

The presently claimed invention addresses this problem by producing corresponding condition codes for each predetermined generated instruction (corresponding to one of a sequence of original instructions). The provision of the condition code associated with the generated instruction reduces the time taken to determine whether that condition code is satisfied by avoiding the requirement to invoke a software-handler routine that would otherwise be required to perform an additional step of referring to the original instruction. The benefits of Applicants' invention are more fully disclosed and discussed on page 8, lines 15-31 of the present application. Cmelik certainly does not render the pending claims obvious and any future rejection under 35 USC §103 is respectfully traversed.

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The Examiner's withdrawal of the previous rejection under 35 USC §101 is appreciated. Additionally, the Examiner's withdrawal of the previous rejections under 35 USC §103 is appreciated. It appears that the only rejection remaining in this application is the rejection of claims under 35 USC §102 and, as noted above, this is simply untenable in view of the Examiner's failure to meet his burden of establishing that each claimed element and method step is disclosed in the single Cmelik reference.

Entry of the Amendment under Rule 116

Entry of the above amendment under the provisions of Rule 116 is respectfully requested. Applicants have not added any additional claims and has cancelled claims 5, 18, 30 and 38, thereby simplifying the issues on appeal. Additionally, no new issues requiring further consideration and/or search are raised by the instant amendment, since the subject matter added to each of the independent claims was present and searched and considered in the previous official action with respect to claims 5, 18, 30 and 38. Inasmuch as these claims were considered in the Final Rejection, there can be no new issue raised by the addition of these dependent claim limitations to their corresponding independent claims.

Even though Applicant has clearly established that Cmelik cannot possibly anticipate the previously presented independent claims, the addition of the limitations from the dependent claims into the independent claims is believed to simplify all issues on appeal and place the claims in easy condition for allowance. Accordingly, entry of the above amendment is respectfully requested.

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Having responded to all objections and rejections set forth in the outstanding Official Action, it is submitted that remaining claims 1-4, 6-17, 19-29, 31-37 and 39-42 are in condition for allowance and notice to that effect is respectfully solicited. In the event the Examiner is of the opinion that a brief telephone or personal interview will facilitate allowance of one or more of the above claims, he is respectfully requested to contact Applicants' undersigned representative.

The Examiner is requested to contact Applicants' undersigned representative by telephone with an indication of the entry or non-entry of this Rule 116 Amendment.

Respectfully submitted,

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